



ROHR2

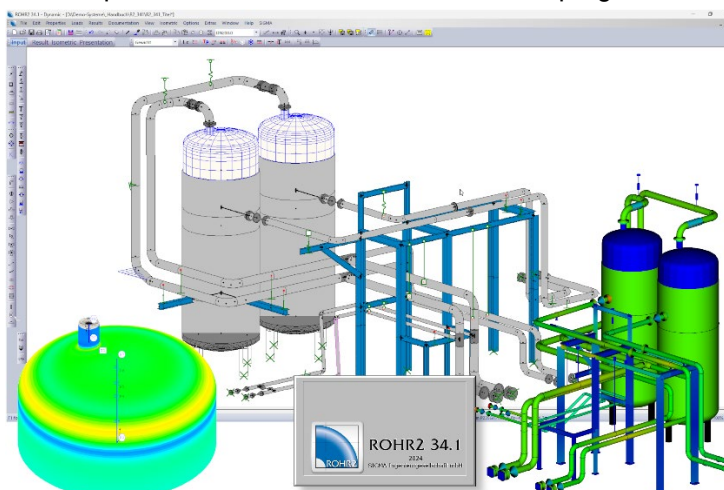
Program System for Static and Dynamic Analysis of
Complex Piping and Skeletal Structures

ROHR2 34.1 November 2024 New Features and Improvements

The program system ROHR2 with its additional modules is checked and modified continuously within the scope of the maintenance agreement.

The program release ROHR2 34.1 replaces the ROHR2 34.0.

This document shows the improvements and enhancements of the program release ROHR2 34.1:

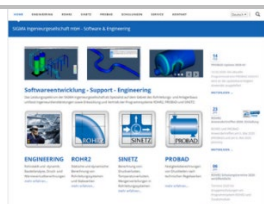


Overview

- New components Flat plate, Stiffening ring, Lifting lug, Support leg ,Support skirt , Lug , Nozzle
- DVS 2210 for plastic pipes has been added
- ASME B31.12 Industrial Piping and Pipelines for Hydrogen Piping has been added
- User-defined gaskets can be defined
- Any user-defined flanges can be calculated if a PROBAD license for EN 1591 is available
- Collision check on the deformed model has been added

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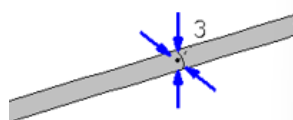
ROHR2 34.1, Modifications and Improvements in detail

Update of stress codes

Title	Content, keywords and source	Edition
EN 13480	DIN EN 13480-3 Metallic industrial piping - Part 3: Design and calculation; German release DIN EN 13480-3:2017-12/A2:2020, A3:2020	2024
ASME B31.1	Power Piping ASME Code for Pressure Piping, The American Society of Mechanical Engineers, New York	2024
ASME B31.12 Part IP	"PL-6.1 Flexibility of Piping" und "Appendix B Chapter B-3 Flexibility Stresses" in ASME CODE FOR PRESSURE PIPING, B31 Hydrogen Piping and Pipelines, ASME B31.12 Part IP	2023
ASME B31.12 Part PL	PL-2.6.1 DESIGN FOR LONGITUDINAL STRESS" in ASME CODE FOR PRESSURE PIPING, B31 Hydrogen Piping and Pipelines, ASME B31.12 Part PL	2023
DVS 2210	DVS code DVS 2210-1 Industrial pipelines made of thermoplastics as well as DVS code DVS 2205-1 Calculation of tanks and apparatus made of thermoplastics - welding factors	2024
ASME CL1	NB-3600 "PIPING DESIGN" in ASME-BOILER AND PRESSURE VESSEL CODE SECTION III SUBSECTION NB CLASS 1	2023
ASME CL2	NC-3600 "PIPING DESIGN" in ASME-BOILER AND PRESSURE VESSEL CODE SECTION III SUBSECTION NC CLASS 2	2023
ASME CL3	NC-3600 "PIPING DESIGN" in ASME-BOILER AND PRESSURE VESSEL CODE SECTION III SUBSECTION ND CLASS 3	2023
ASME VIII Div 2	Stress Analysis of FESU structures acc. to ASME VIII Div 2 Part 5 (Elastic Stress Analysis Method)	2023

User interface in general

- There is now a filter option for the list functions
- There is now a filter option in the Segments' parameters dialog box
- In the ROHR2 tasks dialog box, the width of the area for the tree can be changed
- The "Insert point" dialog box has been expanded. The "Center" option has been replaced by the "Distribute uniformly" option. This means that several nodes can now be automatically inserted into a segment with the same spacing
- Segments - Loads dialog box: the resulting accelerations per segment are now also displayed
- Additional modules licensing dialog box: The license key on which the corresponding program module exists is now also displayed
- Expansion joint dialog box: an additional description field has been added
- When entering a saddle in the framework and when creating a substructure with a saddle, the drawings of the selected saddle type can now be displayed
- Spectra according to EN 1998: Data from the German NA:2021 is now also available for a design spectrum
- Axial movement of several marked segments has been enabled for some cases
- The text boxes now contain a calculation function similar to the input fields in the dialog windows
- A new text template "max. utilization at nozzles" has been added
- An alternative symbolism can be selected for the representation of rigid supports



Components

- The new *Flat plate* type is available for heads
- The *Stiffening ring* component was added
- The *Lifting lug* component was added
- The *Support leg* component was added
- The *Support skirt* component was added
- The *Lug* component has been added
- The component *Nozzle* was added

Boundary conditions

- For pipe couplings, the axial gap can be specified separately for compression and expansion
- Pressure-dependent properties can now also be specified for pipe couplings
- Allowable loads: separate values for positive and negative directions can optionally be entered for supports
- Allowable loads can be taken from a database
- The management of standard supports has been completely revised
- Soil restraint: factors can be specified for the characteristic curves according to the standards, with which these characteristic curves can be influenced



Loadings

- The determination of static earthquake accelerations in accordance with EN 1998:2004 was added
- The determination of static earthquake loads according to ASCE 7-22 was added
- The determination of earthquake spectra according to ASCE 7-22 was added
- The determination of wind loads in accordance with ASCE 7-22 has been added

Calculation

- on heads and blind flanges, wind/snow/ice is taken into account as a concentrated load if this load acts axially here
- Time history calculation: a "lead time" can be specified in which the loads increase from 0 to the load at the first time step to be taken into account. This is useful if the loads are not 0 at time 0s or if you do not want to start at the first time step. This prevents misleading results that could otherwise arise due to the sudden application of the load at the first time step.
- Consideration of footnote (7) from ASME B31J for the influence of stiffeners on the branch stiffness
- Round profiles are now treated like normal pipes when calculating stresses. The sometimes too conservative calculation analogous to square profiles has been avoided
- Load cases follow-up with non-linear soil restraint: Expansion cushions are now regarded as a type of elastic spring; start vectors for subsequent states are therefore no longer taken into account here. Therefore, the reaction forces is now also reduced in this region when relieving in the subsequent state. Previously, the characteristic curve was applied starting from the initial state, i.e. when the load was relieved, a subgrade reaction resulted due to the differential movement compared to the initial state with the opposite sign

Stress analyses

- DVS 2210 for plastic pipes has been added
- ASME B31.12 Industrial Piping and Pipelines for Hydrogen Piping has been added
- ISO 14692: The factors A0, A2, A3 can now be specified separately
- ASME Class 1: The mutual influence of the weld seam on two consecutive bends is observed in accordance with NB 3683.2

Flange analysis

- User-defined gaskets can be defined
- Any user-defined flanges can be calculated if a PROBAD license for EN 1591 is available

Nozzle analysis

- For ISO 5199, permissible loads on the nozzle can also be specified
- A coordinate system can be specified for permissible loads from ROHR2

Presentation of results

- A collision check on the deformed model has been added
- The display of a equivalent stress was also made possible for time-history load cases
- Flange load display: the pressure rating according to EN or ASME is now taken into account for the nominal pressure
- Stress analysis result dialog at node: a table with the results of all equations can be displayed



Interfaces

- Interface PCF
 - the standard attributes "WEIGHT" (mass of a component) and "PIPELINE-REFERENCE" (line designation) have been added to the standard configuration
 - a possibly specified mass is now taken into account for T-pieces during import
 - a possibly specified mass is now taken into account for the element type "FILTER" during import
 - User-defined description texts are now also exported

ROHR2fesu

- The handling of texts/templates is now analogous to the normal interface
- Saddles:
 - Tolerances/allowances can now also be specified for saddle plates
 - Optional consideration of a center rib
- Alternatively, an overall report of all substructures can now be generated in the beam model
- The lengths of the super elements can now also be optionally displayed in the framework

ROHR2iso

- For T-pieces and reducers, masses are now also specified in the parts list. For reducers, the sum of the masses of the pipe sections is always output. For T-pieces, the specified special mass is output. If this is not specified, the sum of the masses of the pipe sections is also output here
- When creating automatic dimensions, there is now an option to take pipeline transitions into account
Printout of graphics with parts list on a separate sheet: The parts list is now the following page in the printout, so that the model and parts list are now in one file when printing in PDF format.
- A minimum length for pipes can be specified for the parts list. Shorter pipe sections are then ignored when the parts list is generated
- The apex of heads can be measured

Presentation mode

- the display of boundary conditions can be switched on/off

Report generation, documentation

- several data marked in the tree can be copied and pasted simultaneously

Databases

- Additional database for support legs
- Additional database for allowable loads
- The database for supports has been revised
- Pre-defined KMR dimensions of various manufacturers available

Development, Sales and Support

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